



09/944 472

04 CO

5-2-02  
patent

09-17-01

PATENT

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

## In re Application of:

James J. Howarth

Serial No.: 09/994,472

Filed: August 30, 2001

For: METHOD OF BALL GRID ARRAY  
(BGA) ALIGNMENT, METHOD OF  
TESTING, ALIGNMENT APPARATUS  
AND SEMICONDUCTOR DEVICE  
ASSEMBLY

Examiner: Unknown

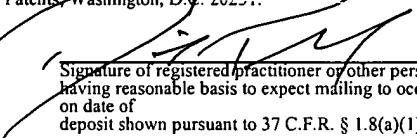
Group Art Unit: Unknown

Attorney Docket No.: 4348US  
(MUEI-0547.00/US)

## CERTIFICATE OF MAILING

I hereby certify that this paper or fee along with any attachments referred to or identified as being attached or enclosed is being deposited with the United States Postal Service as First Class Mail (under 37 C.F.R. § 1.8(a)) on the date of deposit shown below with sufficient postage and in an envelope addressed to the Commissioner of Patents, Washington, D.C. 20231.

September 12, 2001  
Date of Deposit

  
Signature of registered practitioner or other person  
having reasonable basis to expect mailing to occur  
on date of  
deposit shown pursuant to 37 C.F.R. § 1.8(a)(1)(ii)

Deidra Pfeil  
Typed/printed name of person whose signature is  
contained  
above

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents  
Washington, D.C. 20231

Sir:

In compliance with the duty to disclose information material to patentability pursuant to 37 C.F.R. § 1.56, it is respectfully requested that this Information Disclosure Statement be entered and the documents listed on attached Form PTO-1449 be considered by the Examiner and made of record. Copies of the listed documents are enclosed pursuant to 37 C.F.R. § 1.98(a).

In accordance with 37 C.F.R. § 1.97(g) and (h), filing of this Information Disclosure Statement is not to be construed as a representation that a search has been made or an admission that the information cited herein is, or is considered to be, material to patentability as defined in 37 C.F.R. § 1.56(b). Further, no representation is made by Applicant herein that no other possible material information as defined in 37 C.F.R. § 1.56(b) exists.

DOCUMENTS

U.S. Patent Documents

<u>U.S. Patent No.</u>	<u>Issue Date</u>	<u>Inventor</u>
3,932,934	January 20, 1976	Lynch et al.
4,142,286	March 6, 1979	Knuth et al.
4,528,747	July 16, 1985	Hoffman et al.
5,688,127	November 18, 1997	Staab et al.
4,722,135	February 2, 1988	Read
4,733,462	March 29, 1988	Kawatani
4,810,154	March 7, 1989	Klemmer et al.
4,940,181	July 10, 1990	Juskey, Jr. et al.
4,975,079	December 4, 1990	Beaman et al.
4,985,107	January 15, 1991	Conroy et al.
5,006,792	April 9, 1991	Malhi et al.
5,034,802	July 23, 1991	Liebes, Jr. et al.
5,051,339	September 24, 1991	Friedrich et al.
5,051,813	September 24, 1991	Schneider et al.
5,056,216	October 15, 1991	Madou et al.
5,074,036	December 24, 1991	Dunaway et al.
5,155,905	October 20, 1992	Miller, Jr.
5,164,818	November 17, 1992	Blum et al.
5,189,507	February 23, 1993	Carlomagno et al.

Attorney Docket: 4348US (MUEI-0547.00/US)

5,203,075	April 20, 1993	Angulas et al.
5,255,431	October 26, 1993	Burdick
5,329,423	July 12, 1994	Scholz
5,337,219	August 9, 1994	Carr et al.
5,376,010	December 27, 1994	Petersen
5,400,220	March 21, 1995	Swamy
5,403,671	April 4, 1995	Holzmann
5,435,482	July 25, 1995	Variot et al.
5,435,732	July 25, 1995	Angulas et al.
5,442,852	August 22, 1995	Danner
5,446,960	September 5, 1995	Isaacs et al.
5,453,581	September 26, 1995	Liebman et al.
5,459,287	October 17, 1995	Swamy
5,463,191	October 31, 1995	Bell et al.
5,477,086	December 19, 1995	Rostoker et al.
5,477,933	December 26, 2995	Nguyen
5,521,427	May 28, 1996	Chia et al.
5,526,974	June 18, 1996	Gordon et al.
5,528,461	June 18, 1996	Gore et al.
5,556,293	September 17, 1996	Pfaff
5,578,870	November 26, 1996	Farnsworth et al.
5,611,705	March 18, 1997	Pfaff
5,637,008	June 10, 1997	Kozel
5,637,919	June 10, 1997	Grabbe
5,639,323	June 17, 1997	Jordan
5,646,447	July 8, 1997	Ramsey et al.
5,669,774	September 23, 197	Grabbe

Attorney Docket: 4348US (MUEI-0547.00/US)

5,691,041	November 25, 1997	Frankeny et al.
5,702,255	December 30, 1997	Murphy et al.
5,716,222	February 10, 1998	Murphy
5,726,502	March 10, 1998	Beddingfield
5,730,606	March 24, 1998	Sinclair
5,767,580	June 16, 1998	Rostoker
5,770,891	June 23, 1998	Frankeny et al.
5,796,590	August 18, 1998	Klein
5,805,427	September 8, 1998	Hoffman
5,810,609	September 22, 1998	Faraci et al.
5,829,988	November 3, 1998	McMillan et al.
5,887,344	March 30, 1999	Sinclair
5,895,554	April 20, 1999	Gordon
Re. 36,217	June 1, 1999	Petersen
5,924,622	July 20, 1999	Davis et al.
5,930,889	August 3, 1999	Klein
5,947,751	September 7, 1999	Massingill
5,955,888	September 21, 1999	Frederickson et al.
5,983,477	November 16, 1999	Jacks et al.
6,018,249	January 25, 2000	Akram et al.
6,026,566	February 22, 2000	Urban et al.
6,036,503	March 14, 2000	Tsuchida
6,037,667	March 14, 2000	Hembree et al.
6,040,618	March 21, 2000	Akram
6,042,387	March 28, 2000	Jonaidi
6,084,781	July 4, 2000	Klein

Other Documents

Karl J. Puttlitz et al., *C-4/CBGA Comparison with Other MLC Single Chip Package Alternatives*, IEEE Transactions on Components, Packaging and Manufacturing Technology-Part B, Vol. 18, No. 2, May 1995, Pages 250-256.

Lewis S. Goldmann, *Statistical Model for the Inherent Tilt of Flip-Chips*, Trasnsactions of the ASME, Vol. 118, March 1996, Pages 16-20.

Patrick J. Nasiatka et al., *Determination of Optical Solder Volume for Precision Self-Alignment of BGA using Flip-Chip Bonding*, Department of Electrical and Electronic Engineering, The Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong.

Applicant offers to supply any explanation or discussion of the documents which the Examiner feels is necessary or desirable and which is requested.

This Information Disclosure Statement is filed within three (3) months of the filing date of the above-identified application, and no certification pursuant to 37 C.F.R. § 1.97(c) or a fee pursuant to 37 C.F.R. 1.17(p) is required.

Respectfully submitted,



Bradley B. Jensen  
Registration No. 46,801  
Attorney for Applicant  
TRASKBRITT, PC  
P. O. Box 2550  
Salt Lake City, Utah 84110-2550  
Telephone: (801) 532-1922

Date: September 12, 2001

BBJ/djp

Enclosures: Form PTO-1449

Copy of documents cited